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ABSTRACT

Computer technology can assist school psychologists in assessment, data management, and consultation, but there is little centralized information available about the most appropriate ways to use the computer. There is even debate about the amount of interest school psychologists have in acquiring computer skills. A nationwide survey of school psychologist practitioners, trainers, and state coordinators (N=194) was conducted to address these problems. Results showed that 92% of the total sample expressed positive attitudes toward the application of computer technology in school psychology. Those who expressed negative attitudes generally had no access to computers. Coordinators emerged as the most experienced in programming skills and also reported the greatest access to computers. Computer literacy courses were offered by 22% of the responding training institutions. Apple microcomputers were the most popular choice of school psychologists. The findings suggest that the control exercised by school psychologists over the computers in their environment will impact on their services. The appendices contain the survey data tables, a list of existing software for school psychology use, names of computer user groups, and the survey quesitonnaire instruments. (JAC)

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COMPUTER APPLICATIONS IN SCHOOL PSYCHOLOGY: A NATIONAL SURVEY

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ABSTRACT

Outcomes of a national survey on computer applications in school psychology are reported. Results discussed include: (1) attitudes towards computers, (2) levels of expertise in computer use, (3) access to and usage of computers, (4)instructional needs and availability, (5) interest in computer skill development, and (6) hardware and software availability, ranking of usefulness and acceptance. Future needs and trends are identified. Appendices include listings of (1) computer user groups, (2) training programs offering instruction in computers, (3) available software and hardware, and (4) a directory of school psychologists interested in computer applications.

Descriptors: computers, school psychology, computer applications, school psychology software.

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TABLE OF CONTENTS

INTRODUCTION 1

DESCRIPTION OF THE STUDY 2

RESULTS 3

- Characteristics of the Samples, Table 1 3
- Attitudes Towards Computers, Table 2 4
- Levels of Expertise, Table 3 4
- Access to and Usage of Computers, Table 4 5
- Type and Models of Computers in Use, Table 5 5
- Computer Instruction, Table 6 5
- Interest in Obtaining Computer Skills, Table 7 6
- Rankings of Computer Applications, Table 8 6

DISCUSSION 8

- Characteristics and Attitudes of Respondents 8
- Expertise, Access and Usage 8
- Instruction in Computer Skills 9
- Applications: Hardware and Software 10

RECOMMENDATIONS 14

- Summary 16

BIBLIOGRAPHY 18

INTRODUCTION

School psychologists work with large numbers of students, teachers and parents each year: giving, scoring and interpreting assessment procedures; developing, implementing and monitoring intervention plans; consulting and doing inservice of teachers and parents; and maintaining records including intervention effectiveness data, report writing, charting behavioral observation data, development of local norms, and field-based research. Computer technology is available to assist the school psychologist with each of these tasks, and more.

The purpose of the present study was to ascertain the "State of the Art" in computer applications in the school psychology profession. Three goals were established:
(1) to determine the current extent and nature of use of computer technology in the field and in university training programs;
(2) to establish future needs and trends in the application of computer technology;
(3) to establish a linkage and an opportunity to share information among those school psychologists and trainers interested in the application of computer technology in the school psychology profession.

While computer technology exists which would aid in increasing effectiveness and efficiency in assessment, data management and consultation, several problems were apparent prior to the study. There was no centralized information on (a) applicable and available software, (b)school psychologist computer users or programmers, or (c) available training in university or other settings. Further, there was debate about the interest of school psychologists in acquiring information and skills in computer technology (Research notes, McCullough, 1981).

Thus, this paper presents the outcome of a nationwide survey of school psychologist practitioners and trainers, conducted during January, 1982, with the support of the Assistance to the States Committee of the National Association of School Psychologists. This study sought to gather information from practitioners and trainers including those experienced and inexperienced in computer applications in school psychology. An attempt was made to contact those persons especially knowledgable about computer applications in school psychology through recommendations of the NASP State Presidents. Further, through random sampling procedures, an attempt was made to contact a national sample of field practitioners (NASP members). All school psychology training institutions received questionnaires also. The information contained in this report should not be considered exhaustive or complete but rather a start in establishing an information base about computer applications in school psychology.

DESCRIPTION OF THE STUDY

Three separate groups of school psychologists received questionnaires:

Group I, Trainers, consisted of university personnel involved in training graduate student school psychologists. Two questionnaires were mailed to each of the 202 training programs listed in the NASP publication "Directory of School Psychology Training Programs in the United States and Canada" (Brown and Lindstrom, 1977). (N = 202)

Group II, Practitioners, consisted of randomly selected school psychologists listed in the NASP Membership Book (1981), with at least one school psychologist per state selected (N = 300). This group also included school psychology administrators.

Group III, Selected State Representatives (Coordinators), consisted of school psychologists appointed by NASP State Presidents because of their expressed interest or expertise in computer applications in school psychology. Practitioners, trainers and administrators comprised this group (N = 58). Some states named more than one representative.

State Presidents were first contacted and asked to name their state representative. A description of the proposed study accompanied the request. Questionnaires were prepared (see Appendix E) and mailed in early January, 1982, after being field tested in November. Completed questionnaires were accepted until February 19, 1982. Return rates varied across groups. Group I returned 100 questionnaires for a 30% rate of return. Group II returned 66 questionnaires for a 32% return rate. These returns represented 57 of the 202 training programs (28%).Group III had a 93% return rate from a total of 58 questionnaires. Group III was expected to have a high return rate since these individuals volunteered to participate in the study. Data was analyzed along several dimensions: experienced vs inexperienced computer users; field practitioners vs trainers; Groups II and III vs Group I; those with access to computers vs those without access; those who rated themselves novices vs those with higher rankings; and those from larger service distracts (above the median) vs those from smaller districts (below the median).

Questions included on the questionnaire were designed to sample (1) attitudes towards computers; (2) access to and usage of computers; (3) training in computer usage; (4) type and models employed (5) software used including descriptive information, cost, and rating of usefulness (6) self-rated level of expertise; (7) interest in gaining computer skills; and (8) computer users groups or software exchange information.

RESULTS

INTRODUCTION

Results of the national survey of school psychologists on computer applications in school psychology will be discussed first through comparing the three separate groups of the study, trainers, practitioners and coordinators. Statistics will then be combined to provide a picture of how the subjects as a whole respoinded to the questionnaire. Finally, the data will be analyzed to compare other dimensions of the study, e.g. experienced computer users, large service districts vs small districts, etc.

This section will include data on (1) characteristics of the sample; (2) attitudes towards computers; (3) levels of expertise among respondents; (4) access to and usage of computers; (5) type and models of computers employed; (6) type of instruction received in computer technology; (7) interest in gaining computer skills; and (8) rankings of applications. Included in the appendices but also discussed in this section will be (1) software descriptive information, cost and rating of software usefulness; (2) a directory of respondents coded by state, level of expertise and group membership; (3) a listing of computer user interest groups; and (4) a listing of responding training institutions with the type of computer training offered in each.

CHARACTERISTICS OF THE SAMPLES, TABLE 1

GROUP I

Of the 202 training programs, 57 (28%) responded to the questionnaire. This included 64 individuals within these programs. The programs were distributed across 29 states and represented all levels of graduate training from Masters through Doctorate.

GROUPS II AND III

Practitioners and coordinators were closely related along most demographic variables. A majority held Master's degrees (68% vs 64% respectively), were employed by public school systems (83% vs 80%) and held the title of "school psychologist" (70% vs 62%). Differences were noted in the number employed by a college/university (4% vs 12%), and in the mean number of students in the service areas (12,300 vs 17,000). Coordinators tended to work in larger districts than those in the practitioner group (median for coordinators was 8000, for field practioners 3500). Practitioners were distributed across 32 states while coordinators represented 26 states. All three groups were

distributed across a total of 42 states,Guam and Canada.

ATTITUDES TOWARDS COMPUTERS, TABLE 2

Significant majorities in each group of respondents expressed favorable opinions towards computers as a means to enhance efficiency and effectiveness in the school psychology profession. Coordinators and trainers were slightly more positive than practitioners (98% and 95% vs 87%). Practitioners viewed computers as somewhat more of a threat to the profession (2% and 5% vs 13%). The majority of those respondents across groups who indicated negative attitudes towards computers did not have access to or use computers (67%), worked in smaller districts (75%) and rated themselves as novices (73%).

LEVELS OF EXPERTISE, TABLE 3

Self-rankings of level of expertise in computer consumer and programmer skills revealed 36% of all respondents ranked themselves as novices (no experience with computer technology). However, there were significant differences between the groups. The majority of practitioner respondents were in the novice category (52%) while 27% for the trainers and 17% of the coordinators ranked themselves as novices.

Some level of consumer experience was noted by 65% of the trainers and 38% of the trainers possessed programming skills. Thirteen percent of both the trainers and coordinators ranked themselves as advanced programmers and advanced consumers, the highest ranking and one requiring sophisticated skills. In contrast, no practitioner was ranked into this most advanced category. A difference was noted between trainers and coordinators in advanced programming skills with 2% of the trainers and 13% of the coordinators rating themselves into this category. Comparing coordinator and practitioner groups, 66% of the practitioners ranked themselves as novice or beginning consumers, while 30% of the coordinators fell into these categories. In the advanced levels of consumer and/or programmer, 42% of the coordinators ranked their skills as advanced as compared to 18% of the practitioners. Coordinators appeared to be the most experienced, followed by the trainers and finally the practitioners.

ACCESS TO AND USAGE OF COMPUTERS, TABLE 4

A significantly larger proportion of coordinators reported having access to computer systems than sampled practitioners (75% vs 31%). Further, 93% of the responding school psychology programs reported having access to computers. Groups also varied in the length of time computers had been used with 53% of the practitioners reporting usage for one month to one year, 46% of the coordinators reporting usage for more than one year (mean of 6 years) and 51% of the training programs reporting usage for more than one year (mean of 5.8 years).

For those individuals with access to computers use of the system was required for 10% of the practitioners and 15% of the coordinators while usage was encouraged for 22% of the practitioners and 36% of the coordinators. Computer use for daily activities was optional for 66% of the practitioners and 44% of the coordinators while 2% of the practitioners and 5% of the coordinators reported being discouraged from using the system.

Ten training programs (19%) that have access to computers require students to gain competencies in computer usage predominantly in statistics and research courses. Only one program required students to gain skills in practical applied computer usage, such as test scoring. In 5 programs (9%) gaining computer skills is recommended and in 7 programs (13%) computer skill development was optional. Computer literacy courses were offered by 22% of the responding programs.

TYPE AND MODELS OF COMPUTERS IN USE ,TABLE 5

Apple computers were the most popular choice of school psychologists with 46 systems (32% of the total) reported in use. Maxi and mini IBM models were the second most reported hardware followed by the TRS-80 and the maxi PDP-DEC 10. Numerous other computers were reported by each group. More coordinators and trainers reported having hardware available than practitioners (58 and 53 vs 35 respectively).

COMPUTER INSTRUCTION, TABLE 6

More coordinators than practitioners reported having received instruction in computer skills (48% vs 38%). The majority of all respondents received computer instruction during graduate training (predominantly in statistics and research courses, see Table 4). Graduate training taught computer skills to 74% of the trainers, 40% of the coordinators and 56% of the practitioners. Workshops and

courses outside of graduate training were reported as the second most popular method of acquiring computer skills. Workshops were used by 35% of the coordinators, 20% of the trainers and 18% of the practitioners to gain computer skills. On the job training and self-instruction were also methods chosen by some respondents to gain computer skills.

INTEREST IN OBTAINING COMPUTER SKILLS, TABLE 7

Interest in obtaining future training and/or information in computer skills was expressed by a majority of those in each group who rated themselves as novices, including 74% of the trainers, and 77% of the field practitioners. Few coordinators ranked themselves as novices (N = 6) but 45% of them desired computer literacy skills and 55% desired programming skills. Many novice practitioners also desired programming skills (83%).

The most desirable location for obtaining computer skills for all respondents was in local or regional workshops as expressed by 88% of the practitioners, 85% of the coordinators, and 80% of the trainers. Workshops at the NASP convention were a second choice of 58% of the coordinators and 44% of the practitioners.

Interest in participating in a software exchange program was high across groups with affirmative answers given by 86% of the trainers, 87% of the coordinators and 74% of the practitioners.

RANKING OF COMPUTER APPLICATIONS, TABLE 8

Among trainers, Research was consistently ranked most useful. Data Management:Interventions and Inventory, Word Processing and Test Scoring comprised the remainder of the top five rankings. There was a wide range of opinion concerning usefulness of computer development in Test Administration and Report Writing as both received very high and very low rankings.

A comparison of the rankings between trainers with and without computer technology skills indicated both groups rated Research as the most useful computer application. Differences were found between the two group's rankings of Word Processing. The experienced trainers ranked Word Processing high and the nonexperienced trainers ranked it lower.

Coordinator and practitioner rankings of the top five applications of computer technology in school psychology varied widely between the two groups. Coordinators consistently ranked Test Analysis as the area most useful to school psychological practice with 65% ranking it number one or two. More practitioners ranked Research (statistical

programs) as the most useful with 51% ranking it as number one or two. However, overall rankings placed Behavioral Interventions as the highest rated application. The three priority areas ranked high by coordinators were ranked low by practitioners. These applications were Test Analysis, Test Scoring and Report Writing. Instructional Interventions and Research, the remaining applications in the coordinator's top five rankings, were also ranked high by practitioners. Behavioral Interventions, Data Management:Inventory and Data Management:Interventions were applications ranked high by practitioners but ranked lower by coordinators.

Test Administration and Time Management were ranked consistently low by both groups.

DISCUSSION

Discussion of the results of this survey will be integrated to provide an overview of the current extent and nature of use of computer technology in the daily applied practice of school psychologists and in university training programs. Hypotheses about factors appearing to affect the results will be offered with reference to relevant literature and to the statistics provided by this study. Finally, projections of future needs and trends will be offered based on the data collected.

CHARACTERISTICS AND ATTITUDES OF RESPONDENTS

Coordinators and practitioners were ranked similarly on some demographic variables. The majority of each group held Masters degrees, were employed by public school systems and held the title of "school psychologist". This indicated general similarity in training, background and current position. A slightly larger percentage of coordinators reported higher levels of training and position, and larger service areas. Although only 28% of the total number of training programs were represented in the sample, they appeared representative of the field and were distributed across 29 states. A total of 42 states, Guam, and Canada were represented in the total sample.

Predominantly positive attitudes (92% of the total sample) were expressed toward the application of computer technology in the school psychology profession. Of the 8% of the total who expressed negative attitudes it was noted that 67% did not have access to or use computers, 75% worked in smaller districts (below the median) and 73% rated themselves as Novices. This is considered a significant finding. In a study by Kusnir (1968) it was reported that those people who examined and experienced computer technology in school district service delivery became committed to it. Super (1963) also found unfamiliarity with computers to present a realistic barrier to the acceptance of computers. It should be noted that sampling bias could be present in these data since those individuals who are not interested in computers or who have negative attitudes toward computers might not have responded to the survey.

EXPERTISE, ACCESS, AND USAGE

Coordinators emerged as the most experienced group in programming skills with 36% ranking themselves as Intermediate or Advanced programmers, rankings which require sophisticated knowledge of computers. Fewer trainers ranked themselves as Intermediate or Advanced programmers (18%). None of the Practitioners ranked themselves as Advanced programmers and 4% ranked themselves as Intermediate Programmers. Forty percent of the trainers ranked themselves as Novices or Beginning Consumers as compared to 66% of the practitioners and 30% of the coordinators.

Expertise in computer technology appeared to be related to access and use of computers. A significantly larger proportion of coordinators reported having access to computer systems than practitioners (75% vs 31%). Further, 93% of the responding training programs reported having access to computers. Practitioners also had significantly less experience with computers with 53% reporting less than one year of experience. In contrast, 46% of the coordinators reported using computers for more than one year (Mean = 6 years) and 51% of the training programs reported computer usage for more than one year (Mean = 5.8 years).

It is interesting to consider whether coordinators are interested in computers because they have access to hardware or whether they have access because they are interested. It should be noted that Hemphill (1968) found that computer access was most closely related to service area size. Coordinators in this survey did represent slightly larger service areas thus computer access may have been more likely. Sampling procedures for the coordinators sought out school psychologists who had expressed interest in or experience with computers thus sampling bias is evident in the data as well.

Assessing the stress placed on using computers in daily practice, over half the coordinators (51%) reported computer use was required or encouraged as compared to one-third (32%) of the practitioners. One conclusion seems evident: at present computer access is more limited for the practitioner sample. Of those practitioners with access to computers, computer usage is relatively new and thus, not yet stressed in practice. Among coordinators and trainers, and those practitioners with greater access and more long-term experience, computer use may have become a priority with themselves and/or their employers.

INSTRUCTION IN COMPUTER SKILLS

Computer literacy courses were offered by 22% of the responding training programs. In 28% of the programs these courses were required or recommended while 13% listed these courses as optional. Statistics and research courses appeared to be the primary means of gaining computer experience in school psychology programs. Two programs included applied daily practice software in their training sequence of courses, such as test scoring or test analysis. Although 93% of the programs have access to computers 34% reported that they have not yet used the computer as part of course requirements. It appears that instruction in computer applications could be introduced without the cost of purchasing hardware in many programs.

The majority of all respondents reported receiving computer instruction during graduate training, predominantly in statistics or research courses. A recent survey

(Pfeiffer, 1981) on graduate training in school psychology revealed that courses in research and program evaluation were gaining in training emphasis. This finding would suggest that computer training might be integrated and facilitated through these courses. The data in this survey indicated that the majority of responding trainers do have some degree of computer skills. Hynd, Quackenbush and Obrzut (1980) found that the future possibility of a course being taught in a training program was largely dependent upon staff who were qualified to teach in the specific area desired. With 74% of the trainers reporting receiving graduate level instruction in computer skills and another 20% reporting acquiring skills through workshops or other courses, it appeared many trainers would have the skills to develop computer components in courses required for school psychologists.

Interest in obtaining future training and/or information in computer literacy skills was expressed by a majority of those in each group who rated themselves as Novices, including 74% of the trainers and 77% of the practitioners. In addition 83% of the Novice practitioners desired programming skills. A significant majority of each group (80+%) expressed interest in attending computer workshops in local or regional locations. Workshops at the NASP Annual Convention were also a choice of more than half the respondents.

Interest in participating in a software exchange or information program was overwhelmingly expressed by respondents from all three groups (80+%). Comments elicited on the questionnaire indicated much interest in increasing communication among practicing school psychologists in the utilization of computer technology in school psychology practice.

APPLICATIONS: HARDWARE AND SOFTWARE

Apple micro-computers were the most popular choice of school psychologists with 32% of those individuals with access naming Apple. Associated Apple software was also named frequently, both commercially available and self-developed by school psychologist computer programmers. Large school systems and universities tended to have access to maxi and mini IBM hardware which was the second most reported computer in use (16%). TRS-80 was the second most popular micro-computer in use (12%) among school psychologists with access to computers.

Rankings of computer applications revealed Research software was ranked most useful by trainers. Very closely rated within the top five choices of this group were Data Management: Interventions, Data Management: inventory, Word Processing, and Test Scoring. The biasing factor of familiarity should be noted. According the data in this

study, the majority of the respondents' experiences with computers has been restricted to mainly statistical applications. Thus, rankings might be influenced by this factor. Also, it should be noted that research is the one area found to be least utilized by the practicing school psychologist as surveyed by Lacayo, Sherwood and Morris (1981). Thus, practitioners or trainers who have been trained on computers as a research/statistics tool, may not have the opportunity to employ that training and may not be aware of more practical everyday application possibilities.

Wide variation existed in rankings by trainers of Test Administration and Report Writing applications. These two areas also elicited the most spontaneous comments on returned questionnaires. Three interpretations of this outcome appear plausible.

(1) Both Test Administration and Report Writing entail utilizing important knowledge gained through personal contact and interactions with the child. This might represent an area in which the computer may not adequately be substituted, thus leading to lower rankings.

(2) Test Administration and Report Writing represent areas in which school psychologists have been specifically trained and through which expertise can be expressed. Thus, low rankings might suggest feelings of job security being threatened by computer applications.

(3) Lack of knowledge of the capabilities and limitations of the computer may have led to low rankings also. Few of the tests which are commonly used by the school psychologist have been programmed for computer administration. The majority of standardized tests available to be administered by a computer are personality or vocational tests. These procedures are most likely to be used with adults in clinical, vocational or rehabilitation centers. Report Writing capabilities of the computer may also be misunderstood with a low ranking in this area. Report writing may be viewed as a creative task, not to be relegated to a fill-in-the-blanks format. The time-saving text editing functions of computer word-processing which facilitates creative and very personal reports with much greater efficiency than hand-writing, dictating or typing rough drafts may not be understood or even known.

One conclusion seems apparent: knowledge of the capabilties and limitations of the computer in a particular school psychology application appears to play an important role in one's rankings. For instance, experienced trainers ranked Report Writing: Word Processing much higher than trainers without experience with computers.

Coordinator and practitioner rankings of the top five applications of computer technology in school psychology varied widely between the two groups. Coordinators consistently ranked Test Analysis as the area most useful to school psychological practice with 65% ranking it number one

or two. This finding appears to be related to the amount of experience found within the coordinator group as a whole. Many of the coordinators listed Test Analysis software they are using in their daily practice.

Overall rankings by practitioners of their top five choices ranked Behavior Interventions as the highest rated application. However, Research applications (statistical programs) were rated either number one or two by more than half the responding practitioners (51%). The three priority areas ranked high by coordinators were ranked low by practitioners. These applications were Test Analysis, Test Scoring and Report Writing. Again, there appeared to be a relationship between the amount of knowledge and experience with computers and the acceptance and utilization of the technology. Practitioners with little experience may have difficulty accepting a technology perceived to depersonalize and mechanize their roles. This hypothesis is supported in a study by Colburn (1980) in which lack of familiarity with computers and their perceived dehumanizing nature were major obstacles to acceptance.

Instructional Interventions and Research were ranked within the top five applications by both practitioners and coordinators. Behavioral Interventions, Data Management: Inventory and Data Management:Interventions were applications ranked high by practitioners but ranked lower by coordinators. Comparing these rankings with those of the trainers group it appears that not only are rankings dependent on training and experience but professional role and task demands determine perceptions of feasibility and usefulness to the individual. Practitioners predominantly have received computer training only as related to statistics and research. Trainers also were more likely to be involved in statistical or research applications. In contrast, coordinators (who included practitioners with expanded experience with computers) appeared to be more involved with daily processing of referrals and the incorporation of computer technology into their daily practice. This factor is reflected in their high rankings of Test Analysis, Test Scoring and Report Writing. Apparently coordinators have found software in these categories to increase their job effectiveness and/or efficiency, and perhaps their job satisfaction.

Test Administration and Time Management were ranked consistently low by all groups. Test Administration also received the most spontaneous comments as noted previously. Test Administration appeared to be an area in which software development will need to focus particularly on user friendliness and acceptability to practicing school psychologists. Time Management might appeal more to school psychology administrators than to practitioners. Software was identified in this area by some respondents.

The wide variation in how the school psychologist

respondent to this study perceived computer applications as influencing and/or aiding their practices was of interest. A number of school psychologists have developed software to meet specific needs encountered in their daily practice. As more practitioners and trainers become familiar with computer applications a wider variation of applications may be developed. The need to share these developments was strongly expressed by respondents. A concern expressed by some respondents was the fear that services would become mechanical and in effect unethical. This fear appeared to have disipated in groups with more hands-on experience. These more experienced practitioners were more likely to see specific applications as tools, freeing time and energies, and allowing ultimately, more effective and efficient service delivery.

RECOMMENDATIONS

One purpose of this study was to project future trends and needs in computer applications in school psychology. The following recommendations are offered based on the assumption that computer technology can and does enhance professional effectiveness and efficiency.

1. Computer literacy skills must be taught to school psychology graduate students, practitioners, trainers and administrators. Knowledge of the capabilities and limitations of computers is essential to erase realistic barriers to implementation of professional applications. Instructional techniques should include hands-on practice time with a variety of applications including educational software, games, data management, test scoring and analysis, word processing and statistical packages. One goal of the instruction must be to produce knowledgeable computer consumers who can use available software in their daily practice. Based on the results of this survey, interest in obtaining computer literacy skills is high among practitioners and trainers. The vast majority of respondents indicated they would attend local, regional and/or NASP convention workshops to obtain these skills.

2. Access to computers must be increased. Most training programs appeared to have computers available at least on a time-shared basis. As the number of school systems with computers increases, school psychologists need to be aware of the possibilities of modem interfaces (telephone connections), time-share capabilities of state, regional or local systems or the advantages of micro-computers. The Apple microcomputer was the first choice of school psychologists in this study. A wide variety of software exists now and is being developed for this and other microcomputer systems. Computers would pay for themselves quickly with the increased efficiency and accuracy in test scoring, report writing and data management functions. Those school psychologists who had the most experience with using computers in daily practice reported a variety of applications, but especially rated the above named applications most highly.

3. Communication among and between interested school psychology computer users and potential users must be facilitated. The software listings accompanying this report are only a start on collecting and disseminating information about available software and hardware. There is a need for a centralized data collection and dissemination service. Such a service could receive reports on development of software, organize and store the information for retrieval by school psychologists as needed. This service would merely serve as a central agency for information about applied school psychology software without any control as to quality or usefulness of the information.

4. Some means for evaluating software developed for school psychologists is also needed. For example, several programs now exist to score and analyze the Woodcock-Johnson Psychoeducational Battery. These programs vary widely in the quality and organization of information provided to the user. Software is expensive. Some means of ascertaining quality before purchasing it is needed.

5. A concommitant need would be for a newsletter or regular information exchange to inform school psycholgists in general about software or hardware developments of relevance to the profession. This might become a regular feature of the COMMUNIQUE or the SCHOOL PSYCHOLOGY REVIEW. The TSP TRAINERS NEWSLETTER might be another forum for providing information on recent developments in training software.

6. Computer user groups now exist within the school psychology profession. Many of them are listed in the appendices of this report. These groups provide information on local resources, often exchange programs among themselves, and provide support and sharing of programming innovations. These groups are often informal socially oriented groups who welcome any other "computer nuts" to join them. They are an invaluable resource of information and enthusiasm about computer applications in school psychology. The advanced level of knowledge about computer applications represented by these groups is an untapped resource for NASP. Some official representation of this special interest group is needed within the formal structure of NASP to help establish a national network of school psychology computer users.

7. An official committee within NASPon computer applications in school psychology could be charged with the responsibility of implementing some of the recommendations of this report. Continuing Professional Development is a priority of NASP. It was apparent from the results of this survey that one crucial area of inservice training that is needed and desired by NASP members is in computer applications. Other responsibilties would include implementing and maintaining a software information center, a software exchange, and an informational network of articles or people.

8. Program development is needed to meet the special needs of school psychologists especially in the areas of test scoring, and test analysis. Commercially available software has been adapted to school psychologists needs in word processing, and data management areas but research is needed into all application areas to ascertain quality, user friendliness and usefulness of the software. Software development is also especially needed in training applications. Computer simulations of typical responses to test items, for instance, could provide valuable repeated

practice in test scoring to reach competency levels before administering tests to "real" subjects. Such training software could also be used to update or evaluate practical skills of practitioners through continuing professional devlopment workshops.

9. Test administration applications created the most concern and debate among respondents in this survey. Research is needed to identify differences between computer administered tests and practitoner administered tests. The research should focus not only on response differences, but also on qualitative differences in the amount and kind of information achieved under each condition. Some respondents viewed this application as a threat to job security rather than as an opportunity to enlarge the possibilities for service delivery. Research into this problem area is also needed.

10. Training programs must provide practice and instruction in computer applications in school psychology. Without adequate training in applied uses, there is a possibility that school psychologists will view the computer as impersonal and dehumanizing. The data in this study and in others has shown that unfamiliarity presents a realistic barrier to the acceptance of computers in daily practice. Data available in this study on trainers' qualifications and interest in computer applications suggest that implementation of computer components into school psychology courses would be possible. Some updating of skills might be necessary to gain information of current applications but the majority of trainers surveyed had at least some basic knowledge of computers.

SUMMARY

In Grime's (1981) review of the major variables likely to influence psychological services in the schools, he states

> "The future of psychological services in the schools will be shaped by the control exercised by psychologists over the variables in their environment that impact upon the services they provide." (p.207)

One important variable would appear to be the computer. Traditional service models of psychometric evaluation or more comprehensive consultant models both have been influenced by computer technology. Adequate instruction and knowledge of computer applications in school psychology will allow school psychologist to realize the benefits of computer technology. Time spent in tedious time-consuming duties such as test scoring or report writing could be reduced, allowing the practitioner to concentrate on personal consultation, a role which most prefer (Cook and

Patterson, 1977; Meacham and Peckham, 1978).

As the national leader and representative of thousands of school psychologists NASP needs to provide means for school psychologists to benefit from applied computer technology. The following needs have been identified: (1) establish a centralized storage house of information, (2)establish a network of interested computer enthusiasts, (3) desiminate information, (4) establish a software exchange, and (5) plan and support local, regional and national workshops to train school psychologists.

Training institutions need to take the lead as well in providing computer training for school psychology students and practitioners. Training should include applied daily practice software as well as the traditional statistics and research applications. Further, development of software to be used as instructional aids would provide another means to familiarize students with computer capabilities. Research is needed into many areas of computer applications including software development, quality of available programs, impact on professionals and on the profession, impact on efficiency and accuracy, and impact on the children served.

To paraphrase Jeff Grimes: The control exercised by school psychologists over the computers in their environment will impact upon their services.

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Kusnir, J. Developing Data Processing in a School District. In Bumbarger, C.S. & Friesen D. (Eds.), FOCUS ON DATA PROCESSING. Arranged by the Dept. of Ed. Admin., Faculty of Ed., University of Alberta, Edmonton, 1968, 49-59.

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Pfeiffer, S.I. The Status of Training in School Psychology and Trends Towards the Future. JOURNAL OF SCHOOL PSYCHOLOGY, 1981, 19, 211-216.

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APPENDICES

APPENDIX A

TABLES

TABLE 1

CHARACTERISTICS OF SAMPLES

GROUP I - TRAINERS (N=64)

		N	%
Institutions Represented		57	28
States Represented		29	58
Programs Offering:	Masters	23	40
	Specialist	5	9
	Doctorate	5	9
	Combination	24	42

GROUPS II & III - FIELD PRACTITIONERS (N=98) & COORDINATORS (N=52)

		Practitioners	Coordinators	Total
		%	%	%
Academic Degree:	Masters	68	64	67
	Doctorate	32	36	33
Employer:	Public School System	83	80	82
	College/University	4	12	7
	Local Service Center	4	6	5
	State Assoc./Institt.	4	2	3
	Misc. (self/student)	5	-	3
Position:	School Psychologist	70	62	67
	Administrator	12	15	13
	Psychologist	7	6	7
	Professor	4	13	7
	Consultant	4	2	3
	Misc. (student/tchr.)	3	2	3
Students in Service Area:				
	Range	91-140,000	1000-80,000	
	Mean	12,300	17,000	
	Standard Deviation	21,200	23,500	
	Median	3,500	8,000	

TABLE 2

ATTITUDES TOWARDS COMPUTERS

	Trainers (N=64)	Practitioners (N=98)	Coordinators (N=52)	Total (N=214)
	%	%	%	%
Enhances School Psychology Profession	95	87	98	92
Threat to School Psychology Profession	5	13	2	8
Those Reporting "Threat"	(N=3)	(N=13)	(N=2)	(N=18)
	%	%	%	%
No Access or Usage	33	67	0	67
From Small Districts	-	79	50	75
Novice (no experience with computers)	67	71	100	73

TABLE 3

LEVELS OF EXPERTISE

Skill Level	Trainers (N=64)	Practitioners (N=98)	Coordinators (N=52)	Total (N=214)
	%	%	%	%
Novice	27	52	17	36
Beginning Consumer	13	14	13	13
Intermediate Consumer	3	6	10	6
Advanced Consumer	19	6	8	10
Beginning Programmer	6	2	-	3
Intermediate Programmer	-	-	4	1
Advanced Programmer	2	-	13	4
Beg.Con. & Beg.Pro.	3	2	4	3
Int.Con. & Beg.Pro.	-	2	2	1
Int.Con. & Int.Pro.	-	-	6	1
Int.Con. & Adv.Pro.	-	-	2	1
Adv.Con. & Beg.Pro.	11	8	2	7
Adv.Con. & Int.Pro.	3	4	4	4
Adv.Con. & Adv.Pro.	13	-	13	7
No Rating	-	4	2	2

TABLE 4.1

ACCESS TO AND USAGE OF COMPUTERS

TRAINERS

	%
Programs with access to computers (N=53)	93
How long has the computer been used?	
Not yet used	32
One month to one year	7
Over one year	51
Mean	6 yrs.
How is its use handled in course work? (N=57)	
Required	19
Recommended	9
Optional	13
Types of courses offered: (N=22)	
Statistical	27
Research	32
Test scoring/interpretation	5
Not named	36
Programs offering computer literacy courses	38

TABLE 4.2

ACCESS TO AND USAGE OF COMPUTERS

PRACTITIONERS & COORDINATORS

	Practitioners (N=98)	Coordinators (N=52)
	%	%
Percentage with access to computers	31	75
How long has the computer been used?		
Not yet used	23	26
One month to one year	53	28
Over one year	23	46
How is its use handled in daily practice?		
Required	10	15
Encouraged	22	36
Optional	66	44
Discouraged	2	5

TABLE 5

TYPE AND MODEL OF COMPUTERS IN USE

Type (Model)	Trainers (N=64)	Practitioners (N=98)	Coordinators (N=52)	Total (N=214)
	#	#	#	#
APPLE (II,II+)	14	12	20	46
IBM (maxi,mini)	14	3	7	24
TRS-80 (I,II,III)	6	3	8	17
PDP-DEC 10 (2060)	7	-	4	11
PET (CBM 800)	-	2	3	5
BURROUGHS	5	-	-	5
CYBER	4	-	-	4
HEWLITT-PACKARD	3	-	-	3
HONEYWELL (DPS440,6000)	-	2	1	3
CPT (Basic Four 510+)	-	2	1	3
WANG	-	2	1	3
OSBORNE	-	-	2	2
STATE COLLEGE	-	-	2	2
UNIVAC	-	1	1	2
NORTHSTAR (Horizon II)	-	1	1	2
MMC II	-	1	-	1
VAX	-	1	-	1
780 STARTER KIT	-	1	-	1
VIC 20	-	1	-	1
HEATHKIT (H-8)	-	1	-	1
NCR	-	1	-	1
PRIME 750	-	-	1	1
AS/6	-	-	1	1
TI 990	-	-	1	1
INTERTEC-SUPERBRAIN	-	-	1	1
OHIO SCIENTIFIC	-	-	1	1
ATARI	-	-	1	1
TOTAL	53	34	57	144

TABLE 6

COMPUTER INSTRUCTION

	Trainers (N=64)	Practitioners (N=98)	Coordinators (N=52)	Total (N=214)
	%	%	%	%
Have Received Instruc.	53	38	48	45
Where Received:				
Graduate Training	74	56	40	57
Course/Workshop	20	18	35	23
On the Job	-	13	8	8
Self-Taught	6	13	17	12

TABLE 7

INTEREST IN OBTAINING COMPUTER SKILLS

	Trainers (N=14)	Practitioners (N=40)	Coordinators (N= 5)	Total (N=59)
Novices Interested in Acquiring Skills:	%	%	%	%
Computer Literacy	93	77	45	77
Programming	81	83	55	81
	(N=64)	(N=98)	(N=52)	(N=214)
Respondents Who Would Attend Workshops:	%	%	%	%
At NASP Convention	82	44	58	59
At Regional Location	82	88	85	85
Those Interested in Information and Software Exchange	89	74	87	81

TABLE 8

RANKING OF COMPUTOR APPLICATIONS

Application	Trainers % ranked		Practitioners % ranked		Coordinators % ranked	
	top 5	# 1	top 5	# 1	top 5	# 1
Test:						
Administration	-	-	-	-	-	-
Scoring	84%	36%	-	-	94%	59%
Analysis	-	-	-	-	97%	65%
Report:						
Writing	-	-	-	-	88%	53%
Word Processing	88%	25%	-	-	-	-
Data Management:						
Interventions	80%	39%	87%	39%	-	-
Inventory	84%	39%	84%	39%	-	-
Research:						
Statistics	100%	51%	87%	51%	93%	42%
Interventions:						
Behavioral	-	-	95%	30%	-	-
Instructional	-	-	89%	24%	97%	14%
Time Management	-	-	-	-	-	-

APPENDIX B

EXISTING SOFTWARE

EDITOR'S NOTE:

The information presented in this listing of existing software reflects the incomplete information submitted. The list is not meant to be exhaustive or complete but rather it is the beginning of a data base of computer applications in school psychology.

The authors cannot guarantee the accuracy of the information or the rankings given to the software. The rankings reflect the opinion of the respondent who submitted the information.

You are urged to contact the user listed with the software to obtain more information. A directory is attached with the addresses of school psychologists interested in computer applications in school psychology. With luck, the address of the software user you are interested in contacting can be found there.

EXISTING SOFTWARE

TEST ADMINISTRATION

Software	Rating	Hardware	Devel/Dist	Contact
Title NA	(E)	IBM 370	University of Iowa	S. Ehly IA
Title NA	(E)	---	Peter Walmut Multnoma Co. ESD	M. Pickens OR
Title NA	(E)	PDP 11-70	Dr. David Kress Arizona State Univ.	J. Carroll AZ
PIAT 80 ($49.95)	(F)	TRS 1 & 11 Apple II	Precision People 87 Grassy Lake Est. Archer, FL 32618 904-495-9246	W. Joerg IL
Card Reader	-	Apple II	John Casper Chatsworth Data Coop.	J. Casper WI
Computerized WISC-R Manual	-	Apple II w/ CPM and Modum Osborne 1, Intertec-Superbrain	Steven Ray	S. Ray LA
Title NA	-	IBM 370, VAX, Apple II TSR 80	Local	B. Graves OK

TEST SCORING

Software	Rating	Hardware	Devel/Dist	Contact
VISICALC	(E)	TRS 80 Model III	Radio Shack	R. Wilson WV
WISC-R Scoring & Analysis ($3.00/ea)	(E)	H-89, H-8, Apple II, TRS-80	John Bennin Micro Tech	J. Bennin WI
Title NA	(E-G)	DEC System 2060	Jay Hansche & Students	J. Hansche LA
Woodcock-Johnson & WISC-R	-	Pet-Commodore	Renata Janus	R. Janus UT
VISICALC ($200)	(G)	Apple II	John Casper	J. Casper WI
Achenbach Beh. Checklist	(G)	TRS-80 Model III	Peter Pratt & Richard Wright	P. Pratt & R. Wright MT
Lutey WISC-R	(G)			
Sociogram	(G)			
Personality	(G)			
Computerized WISC-R Manual	-	Apple II w/ CPM & Modum, Osborne 1, Intertec-Superbrain	Steven Ray	S. Ray LA

TEST SCORING cont.

Software	Rating	Hardware	Devel/Dist	Contact
Woodcock-Johnson Test Battery Analysis ($9.50/stud.)	(G-E)	Apple II	Sysdata Intnl. 7671 Old Central Ave. Minneapolis, MN	P. Maduns & K. McGrew MN
Title NA	-	IBM 370	University of Iowa	S. Ehly IA
WISC-R Factor Analysis	(E)	Apple II	Sam Gabby AEA 5 Sac City, IA	O. Dodson IA
Million Multi-Axal Clinical Inventory Personality Inventory	(E)	—	Interpretive Scoring Systems Minnesota	A. Bricker MI
Title NA	(E)	—	Peter Walmut Multnoma Co. ESD	M. Pickens OR
Jo-So High Personality Quest	(E)	Apple II	Donald Bowman	D. Bowman PA
Title NA	(E)	Honeywell	—	R. Duncan AZ

TEST ANALYSIS

Software	Rating	Hardware	Devel/Dist	Contact
Title NA	(F)	Heathkit H-8	Teachermade	L. Heflebower NE
Title NA	(E)	IBM 370	University of Iowa	S. Ehly IA
Title NA	(E)	—	Peter Walmut Multnoma Co ESD	M. Pickens OR
WISC-R Factor Analysis	(E)	Apple II	Sam Gabby AEA 5 Sac City, IA	O. Dodson IA
Title NA	(E)	Honeywell	—	R. Duncan AZ
Computer Assisted Diagnosis	(E)	Apple	Marley Watkins	M. Watkins AZ
ITAN	(G)	Commodaore Pets Multics IBM 370	Robert Black & Dept. of Comp. Serv. at Univ. of Calgary	R. Black Canada
Title NA	(E-G)	DEC System 2060	Jay Hansche & Students	J. Hansche LA
Woodcock-Johnson WISC-R	—	Pet, Commodore	Renata Janus	R. Janus UT
Achenbach Beh. Checklist	(G)	TRS-80 Model III	Peter Pratt & Richard Wright	P. Pratt & R. Wright MT
Lutey WISC-R	(G)			
Sociogram	(G)			
Personality	(G)			
After the PPVT What: Diag. & Remed	-	Apple II w/ CPM & Modum, Osborne 1, Intortec-Superbrain	Steven Ray	S. Ray LA

TEST ANALYSIS cont.

Software	Rating	Hardware	Devel/Dist	Contact
Psych Report	--	Apple II	Phil Bowser	P. Bowser OR
Woodcock-Johnson Test Battery Analysis ($9.50)	(G-E)	Apple II	Sysdata Intern 7671 Old Central Ave. Minneapolis, MN	P. Raduns & K. McGrew MN
WISC-R Scoring & Analysis	(E)	H-89, H-8, Apple, Atari, TRS-80	John Bennin Micro Tech	J. Bennin WI
VISICALC ($200)	(E)	TRS-80 Model III	Radio Shack	R. Wilson
Title NA	(F)	IBM	User Written	D. Bartree IL
WISC-R Factor Analysis	(E)	Apple II 48K 1 disk	Sam Gabby Box 144 Sac City, IA 50583	S. Gabby IA
Woodcock-Johnson Achievement Test	(E)			
MMAC H Group Descrim Classif	-	IBM 4341, Deck 10, Apple II, TRS-80	McDermott Psy. Corp. Veldran/U. Texas Cooley & Lohare	P. McDermott P.
Calculate IQ Ach Discrepancy per 1A Guidelines ($40)	(E)	Apple	Sam Gabby, Psy Box 144 Sac City, IA 50583	S. Gabby IA

REPORT WRITING

Software	Rating	Hardware	Devel/Dist	Contact
Scripsit ($199)	(E)	Apple II	Radio Shack	W. Halson
Conversational Time Share(CTS)	(G)	Apple II, Univac 1100	--	R. Townsend MN
Title NA	-	Xerox 820	--	B. Hartman NJ
Script	-	IBM	--	W. Black CA
MMAC	(E)	IBM 4341	Cooley & Lohare	P. McDermott P.
Northstar/Wordstar	(E)	IBM 360	Wordstar	S. Brown CN
Title NA	(E)	Apple II	--	P. Romine TN
UNIX	(G)	CDC 6400	--	A. Gold CA
UNIX	(E)	B7800	Bell Lab	J. Sandoval CA
Command Line Interpretation	(E)	IBM 360	--	R. Johnson SC
Super Scribe II ($129)	(G)	Apple	--	M. Watkins AZ

REPORT WRITING cont.

Software	Rating	Hardware	Devel/Dist	Contact
Magic Window ($125)	(G)	ASC II	—	M. Watkins AZ
Word Pro-Multics Data Point 1500	(G)	Honeywell	—	R. Black Canad
OST-DMS	(E-G)	—	Ohio Scientific Spec. Ed. State	J. Pagkus WA
DEC Runoff DSR & Ripoff	(G)	DEC	—	J. Hansche LA
Title NA	-	Pet	—	R. Janus UT
Psych Report	(G)	TRS-80	Peter Pratt & Richard Wright	P. Pratt MT
Wordstar ($399)	(E)	Osborne	—	S. Ray LA
Microspell ($250)	(E)			
4 FD	(G)	CPT 8000	—	J. Reeves SC
Apple Writer	(F)	Apple	—	E. Mason KY
Wang	(E)	IRS/Wang	—	G. Kesper IN
Programming Ed. ($30)	(G)	Apple	Software Toolworks	J. Bennin WI
Text Formation ($40)	(E)	Apple	Software Toolworks	J. Bennin WI
Title NA	-	IBM	—	D. Bortree IL

DATA MANAGEMENT: INTERVENTIONS

Software	Rating	Hardware	Devel/Dist	Contact
IQL	(F)	DEC 2060	Local	J. Hansche LA
DEC Edit (Free)	(G)	DEC 2060	Local	J. Hansche LA
DB Master ($300)	(G-E)	Apple II, II+, TRS I & II DEC	Stoneware Microcomp. Prod. So. Belvedore San Rafael, CA 94901	O.R. Dodson IA D. Hill IA B. Jensen IA W. Joerg IL
CCA Data Man ($150)	(P-G)	Apple II	John Casper	J. Casper NY D. Bayer NY
Title NA	(F)	H-89, H-8, Apple, Atari, TRS 80	John Bennin	J. Bennin WI
Custom Program	-	—	—	M. German AZ

DATA MANAGEMENT: INTERVENTIONS cont.

Software	Rating	Hardware	Devel/Dist	Contact
OSI-DMS Spec.Ed.DataMan.	(E-G)	Ohio Scientific C3-B	Ohio Scientific Spec. Ed. St.	J. Pagius WA
Conversational Time Share	(E)	UNIVAC	—	P. Rice MN

DATA MANAGEMENT: INVENTORY

Software	Rating	Hardware	Devel/Dist	Contact
Title NA	-	Apple II, 64K	Richard Aronoff Micro Pro 1299 4th Street San Rafael, CA 94901	R. Aronoff IL
Data Storage	(E)	IBM, WANG	Gene Schwarting	G. Schwarting
DB Master mailing lists	(G-E)	Apple II	Stoneware Microcomp. Prod. So. Belvedore San Rafael, CA 94901	D. Hill IA B. Jensen
Student, Staff Records, Inventory	(G)	TRS-80, Model III	Peter Pratt & Richard Wright	P. Pratt MT R. Wright
PFS & Reporter ($95)	(E)	Apple II, Osborne Intertec-Superbrain	Software Pub. Corp. 2021 Landings Dr. Mountain View, CA 94043	S. Ray LA
Profile ($200)	(E)	Apple II	Radio Shack	W. Nelson FL
Versafile	(F)	Apple II	Radio Shack	W. Nelson FL
Admin. Mailing	(G)	IBM, PRIME, DEC Apple II+	Emanuel Mason	E. Mason KY
Mailing List ($100)	(G)	TRS-80, Model III	Radio Shack	R. Wilson WV
Record Keeping	(G)	Heathkit H-8	—	L. Heflebower

RESEARCH

Software	Rating	Hardware	Devel/Dist	Contact
SPSS	(E)	Several	SPSS Inc.	Several
SAS	(E)	Several	SAS Inc.	Several
BIOMED	(G)	Several	—	Several
Q-Stat ($250)	(G)	—	Mike Biderman Psy. Dept.-UTC Chattanooga, TN 37402	G. Helton TN

RESEARCH cont.

Software	Rating	Hardware	Devel/Dist	Contact
Statistical Analysis ($40)	(F)	Apple II	Radio Shack	W. Nelson FL
Stat Pak	(G)	Apple II	Kaufmann	W. Nelson FL
SPM ($75)	-	Apple II	Medsystems	W. Nelson FL
CCA DMS ($100)	-	Apple II	DMS	W. Nelson FL
Multivariance	(F)	IBM 370	—	T. Gutkin NE
Title NA	(E)	IBM, Wylbur	University of Iowa	S. Ehly IA
Title NA	-	Heathkit, H-8	—	L. Heflebower NE
Research Assist.	(G)	Apple II	Tom Andre Iowa State Univ. Ames, IA	O. Dodson IA
Honeywell Stat Pak	(G)	Honeywell 6000 Wang 5-III	—	R. Duncan AZ
OSI-DMS	(G)	—	Spec Ed.	J. Pagkus WA
VISICALC	(G)	Apple II	John Casper	J. Casper WI
Software Devel.	-	TRS-80	—	P. Pratt MT
Stat with Daisy ($75)	(E)	—	Rainbow Computing Business Center Dr. Northridge, CA 91324	S. Ray LA
Micro Stats ($295)	(G)	—	Lifeboats Software	S. Ray LA
HSP Stats Anova Regress ($95)	(E)	—	Human System Dynamics	S. Ray LA
Stat Pak ($450)	(E)	—	Lifeboats Software	S. Ray LA
Local ($6000)	(E)	IBM, SUS C30 Model 138	—	E. Matthews O
Adv. Stat	(G)	TRS-80	Radio Shack	R. Wilson WV
User Written	(F)	IBM	—	D. Bortree IL
Correl.	(G)	TRS-80	Dick Rankin	S. McCullough OR
Prediction	(G)			
ANOVA	(G)			
Mul-R	(G)			
Profile Anal	(G)			
WISC-R				

INTERVENTIONS: BEHAVIORAL

Software	Rating	Hardware	Devel/Dist	Contact
Commer. Game Programs	(E)	Apple	Varied	M. Watkins AZ
DB Master	(E)	Apple II	Stoneware Microcomp. Prod. So. Belvedore San Rafael, CA 94901 415-454-6500	D. Hill IA
Card Teader	-	Apple II	John Casper Chatsworth Data Corp.	J. Casper WI
Datamyte (hardware device to be interfaced w/ host computer) ($2000)	(P)	DEC, PDP 11-70 Apple II	Electro General Corp	C. Kalitta IA
Varied	(G)	TRS-80 Model III	Varied	P. Pratt MT
Varied	(E-P)	Apple, Atari, TRS-80	Varied	J. Bennin WI
Research Assist.	(G)	—	Tom Andre IA State Univ. Ames, IA	O. Dodson

INTERVENTIONS: INSTRUCTIONAL

Software	Rating	Hardware	Devel/Dist	Contact
MMAC	(E)	IBM 4341	Cooley & Lohars	P. McDermott PN
Title MA	-	IBM-360	Scott Brown	S. Brown CN
Space Math ($9.00)	(E)	VIC 20 Commodore	—	J. Deumeyer W
VISICALC	(E)	TRS-80	Radio Shack	R. Wilson WV
Math Mach Spell Mach Spell Sorcery Math Wars	(E) (E) (E) (E)	Apple	Southwest Ed. Psy P.O. Box 1870 Phoenix, AZ 85001	M. Watkins AZ
Various	(E-P)	Apple, Atari, TRS-80	—	J. Binnen WI
Robot Wars-Muse Logical Thinking	(E)	Apple II	—	J. Casper WI
Games	(G)	IBM, Prime, DEC, Apple II	Emanuel Mason	E, Mason
Creative Programs for Spec. Kids	-	Apple	Phil Bowser	P. Bowser OR

TIME MANAGEMENT

Software	Rating	Hardware	Devel/Dist	Contact
Custom Program	-	—	—	M. German AZ
SPSS	(G)	IBM	—	E. Maret
Title NA	(E)	IBM 370 Model 138	Local	E. Matthews OH
Title NA	(E)	Apple II	Paul Raduns	P. Raduns MN
Proj. Time Man. ($100)	-	—	Radio Shack	W. Nelson FL

APPENDIX C

COMPUTER USER GROUPS

TRAINING INSTITUTIONS OFFERING INSTRUCTION IN COMPUTER USES

COMPUTER USER GROUPS

IOWA

John Reudzio, AEA 6, Marshaltown, IA

Sam Gabby, AEA 5, Sac County Courthouse, Sac County, IA 50583

MICHIGAN

Harold M. Molter, 185 W. Pineview Dr., Saginaw, MI 48603

MONTANA

Richard Wright and Peter Pratt, School Psychology, Lewistown Public Schools, Lewistown, MT 59457

OREGON

Peter Walaut, Multnomah Co. ESD, Portland, OR

Walt Hathaway, Portland Adm. Center, Portland, OR

Phil Bowser, Applied Computer Enterprises and Services, 3357 Onyx Place, Eugene, OR 97405

UTAH

Jane Flygare and Chuck McCusker, Dept. of Ed. Psyc., University of Utah, Salt Lake City, UT 84102

WASHINGTON

Charles Heath, No. Thurston School District, 6202 Pacific Ave., Lacey, WA 98503

Joseph Pagkus, Franklin Pierce School District, 1606 7th St S.E., Puyallup, WA

WISCONSIN

WSPA Wisconsin School Psychology Assoc. reports a very loose network of users.

WEST VIRGINIA

Robert Clark, Ph.D., W.V. College of Graduate Studies, Institute, WV 25112

WYOMING

Dr. Lamar Gordon, State Dept. of Ed., Hathaway Bldg., Cheyenne, WY 82001

CANADA

Alberta Assoc. for Advancement of Ed. Data Systems, Alworth, Dept. of Ed. Psyc.,Univeristy of Calgary, Alberta, Canada

PROGRAMS OFFERING COMPUTER INSTRUCTION IN RESEARCH COURSES

University of Pennsylvania
Florida Atlantic University
University of Nebraska
Seton Hall University, N.J.
Tennessee Tech University
University of California, Berkeley
Duke University, N.C.
Winthrop College, S.C.
Ball State University, Ind.
Middle Tennessee State University
East Carolina University, N.C.
Memphis State University, Tenn. (stat only)
East Kentucky University
University of California, Davis
Moorhead State University, Mn.
University of Oregon

PROGRAMS USING COMPUTERS AS INSTRUCTIONAL AIDS

University of Oklahoma
University of Oregon

APPENDICES

Appendix A, Tables 19

Appendix B, Existing Software 20

Appendix C, Computer User Groups 29

Training Institutions Offering Instruction in Computer Uses

Appendix D, Directory of School Psychologists Interested in Computer Applications 38

Appendix E, Survey Questionnaire For Practitioners 41

Survey Questionnaire For Trainers 49

APPENDIX D

DIRECTORY OF SCHOOL PSYCHOLOGISTS INTERESTED IN COMPUTER APPLICATIONS

SCHOOL PSYCHOLOGISTS INTERESTED IN COMPUTER APPLICATIONS

The following codes are used to identify respondents:
T = Trainers
P = Practitioners
C = Coordinators
0 = Novice
1 = Experienced (Beg., Int., Adv.)

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APPENDIX E

SURVEY QUESTIONNAIRE FOR PRACTITIONERS

SURVEY QUESTIONNAIRE FOR TRAINERS

NATIONAL ASSOCIATION OF SCHOOL PSYCHOLOGISTS

December 1981

Dear School Psychologist:

The attached survey instrument concerned with computer applications in the field of school psychology is part of a nationwide study being sponsored by the NASP, National Association of School Psychologists Assistance to the States Committee. This project is concerned specifically with determining the current "State of the Art" of computer applications in school psychology. The results of this study will help to:

1. determine the current extent and nature of computer technology in both field practice and training programs;
2. identify future needs; and
3. establish a link and opportunity to share information among interested field practitioners and trainers.

We are particularly interested in obtaining your responses because it is critical that we receive a large and representative sample of school psychologists in order to make this study optimally useful to the field. The enclosed instrument has been tested with a sampling of school psychologists, and we have revised it in order to make it possible for us to obtain all necessary data while requiring a minimum of your time. The average time required for school psychologists filling out this survey instrument was 10 minutes.

It will be appreciated if you will complete the enclosed form prior to January 15, 1982, and return it in the stamped, self-addressed envelope enclosed. Other phases of this research cannot be carried out until we complete analysis of the survey data. We would welcome any comments you may have concerning any aspect of computer applications in school psychology not covered in the instrument. We will be pleased to send you a summary of the survey results if you desire. Thank you for your cooperation.

Sincerely yours,

C. Sue McCullough

C. Sue McCullough, Ed.D.

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-1- December, 1981

COMPUTER APPLICATIONS IN SCHOOL PSYCHOLOGY:
A SURVEY OF FIELD PRACTITIONERS

Name_____ Employer_____

Address_____ Degree/Year Completed MA____MS____

_____ Ed.D.____Ph.D.____

Phone (Work)_____ Position_____

Phone (Home)_____ Student Population of Service Area_____

(If you prefer to have your name and address not included on a list of school psychology computer users, please check here____).

1. What is your opinion about the increasing use of computers in school psychology? Rate yourself on the following scale by circling the appropriate number:

1 2 3 4

Threat to School Psychology Profession-May eliminate Jobs

Enhances School Psychology Profession-Increases efficiency and potential for effective performance

2. Do you have access to a computer system? (____Yes____No) If yes, list type, model, and location:_____

If more than one, which system is most accessible to you?_____

If no, proceed to question #5 and answer questions 5 through 11.

3. If you answered yes to question #2, indicate how long you have been using the computer in your practice.

____Not yet used ____6 months to 1 year

____1 to 6 months ____Over 1 year (____Years)

4. Indicate whether the use of the computer and associated software in your daily practice is:

____Required ____Encouraged ____Optional ____Discouraged

5. Have you received instruction in computer technology? ____Yes____No

If yes, please indicate where and briefly explain:_____

_____

_____

_____

6. Rate yourself according to the following scale. Check all those that apply.

_____Novice: No experience with computer technology but I am interested in acquiring computer literacy skills (_____Yes_____No) and/or basic programming skills (_____Yes_____No).

_____Beginning Consumer: Have experience with relatively simple programs, e.g., games, course examinations.

_____Intermediate Consumer: Have experience with more moderately difficult programs, e.g., word processor, computer assisted instruction.

_____Advanced Consumer: Have experience with more complex programs, e.g., statistical packages (SPSS, Biomed).

_____Beginning Programmer: Have written at least one simple program, e.g., as part of course/workshop requirement.

_____Intermediate Programmer: Have independently written at least one moderately difficult program, e.g., computer assisted instruction, personal use.

_____Advanced Programmer: Have written or modified at least one complex program, e.g., simulations, statistical analysis, data management.

7. Would you want to attend a workshop at the NASP Convention (_____Yes_____No) or a regional location (_____Yes_____No) to acquire computer skills and/or knowledge of computer applications in school psychology?

8. Would you want to participate in an informational and program (software) sharing system with other school psychologists? _____Yes_____No

9. Do you belong to, or know of, a school psychology computer users group at your local and/or state level? _____Yes_____No If yes, please give names and addresses of contact individual(s):

_____

_____

_____

10. Please list any other comments or recommendations you have regarding the use of computers among school psychologists:

_____

_____

_____

11. If you are not using a computer, please indicate in column 7 on the attached chart which applications you believe would be most useful in the school psychology profession by rank ordering your choices from 1-10 (with 1 being most useful).

12. If you are using a computer in your practice, please fill out the attached chart.

-3-

13. a. In column 1 below is a listing of possible school psychology applications of computer technology (see reverse side for description of terms);
    b. In column 2 check those applications you currently use as part of your professional practice;
    c. In column 3 list the software name; and a brief description;
    d. In column 4 list the developer and/or distributor, including addresses, if known;
    e. In column 5 list the current purchase price, if known;
    f. In column 6 rate the software using the following criteria:
        Excellent: Easy to use without modification, good documentation.
        Good: Requires some training and practice to master, may need modification.
        Fair: Lacks good documentation, more difficult to use, expensive.
        Poor: Not recommended for school psychologist applications, outdated.
    g. In column 7 rank order the software from most useful to school psychological practice to least useful (with 1 being most useful).

1 APPLICATION	2	3 SOFTWARE NAME	4 DEVELOPER/DISTRIBUTOR	5 COST	6 RATING E	G	F	P	7 RANK ORDER/ COMMENTS
Test: Administration Scoring Analysis									
Report Writing									
Data Management: Interventions Inventory Other:									
Intervention Strategy: Behavioral Instructional									
Research Statistics Other:									
Time Management									
Other:									

Definitions of terms

I. Assessment

A. Test Administration - using computers to administer tests, usually forced choice items.
B. Test Scoring - input raw scores receive output of standard scores, grade equivalents, etc.; may be on tape or disc, or purchased on a per test basis from distributor.
C. Test Analysis - sometimes accompanies test scoring output; analyzes data according to set criteria or interpretive model.

II. Report Writing

A. Software specifically developed to facilitate psychological report writing, e.g. programmed text with options from which to choose to personalize report.
B. Use of word processor or text editor software to write and edit text.

III. Data Management

A. Interventions - software designed to organize, store and retrieve behavioral intervention data, making accountability for effectiveness of interventions possible, as well as increasing record keeping efficiency.
B. Inventory - software for purchasing, budgeting and ordering required assessment materials.
C. Other - assessment data record keeping, retest reminders, central files, IEP records, etc.

IV. Intervention Strategy

A. Behavioral - using microcomputers as part of contingency management procedures, e.g. to change inappropriate behavior, for motivational purposes, psychological programming, self-concept games, etc.
B. Instructional - recommending computer-assisted instruction (CAI) software as an instructional intervention, e.g. math exercises, quizzes, social studies units, simulated science experiments, etc.

V. Research

A. Statistics - software programmed to compute various statistical analyses on input data, e.g. correlation, ANAVAR, Multiple Regression, etc.
B. Other - using the computer for research, e.g. software development and testing, simulations, CAI vs traditional techniques, etc.

VI. Time Management

A. Assessment of school psychologist's activities for budgetary and planning purposes.
B. Assessment of teacher or pupil activities as part of consultation and intervention processes.

VII. Other

A. Simulations or practice programs for training or continuing professional development.
B. Systems evaluation
C. Be creative!

-1- December, 1981

COMPUTER APPLICATIONS IN SCHOOL PSYCHOLOGY:
A SURVEY OF TRAINERS

Name_____ Position_____

Address_____ Training Institution_____

Phone (Work)_____ Number of Masters Students_____

Phone (Home)_____ Number of Doctoral Students_____

(If you prefer to have your name, address and program not included on the list of interested school psychology computer users, please check here____).

1. What is your opinion of the increasing use of computers in professional practice or in the training of school psychologists? Rate yourself on the following scale by circling the appropriate number.

1 2 3 4

Threat to School Psychology Profession- May eliminate jobs

Enhances School Psycology Profession- Increases efficiency and potential for effective performance

2. Do you or your program personnel have access to a computer system? (____Yes____No)

If yes, list type, model and location:_____

If more than one, which system is most accessible to you?_____

If no, proceed to question #6 and answer questions 6 through 12.

3. How long have you been using a computer system(s) in your training program?

____Not yet used ____1 to 6 months ____6 months to 1 year

____Over 1 year (____Years)

4. Are students being trained to use applied school psychology software, such as test scoring and analysis, or data management programs?

____Yes ____No If yes, is the training:

____required as part of course requirements?

____highly recommended through electives?

____optional through electives?

____optional through state or regional workshops?

5. Are computers being used as instructional aides in graduate courses, such as, for examinations, or repeated practice on assigned tasks?

____Yes ____No If yes, please complete the information below.

A. Course Name	B. Purpose/Use	C. Software Name	D. Developer or Distributor

6. Rate yourself according to the following scale. Check all those that apply.

_____Novice: No experience with computer technology but I am interested in acquiring computer literacy skills (_____Yes_____No) and/or basic programming skills (_____Yes_____No).

_____Beginning Consumer: Have experience with relatively simple programs, e.g., games, course examinations.

_____Intermediate Consumer: Have experience with more moderately difficult programs, e.g., word processor, computer assisted instruction.

_____Advanced Consumer: Have experience with more complex programs, e.g., statistical packages (SPSS, Biomed).

_____Beginning Programmer: Have written at least one simple program, e.g., as part of course/workshop requirement.

_____Intermediate Programmer: Have independently written at least one moderately difficult program, e.g., computer assisted instruction, personal use.

_____Advanced Programmer: Have written or modified at least one complex program, e.g., simulations, statistical analysis, data management.

7. Would you attend a workshop at the NASP Convention or a regional workshop to acquire knowledge of school psychology computer applications? _____Yes_____No

8. Do you belong to, or know of, a school psychology computer users group at your local and/or state level? _____Yes_____No If yes, please give names and addresses of contact individual(s):

_____

_____

9. Would you participate in an informational and program (software) sharing system with other training programs? _____Yes_____No

10. Have you received instruction in computer technology? _____Yes_____No If yes, please indicate where, and briefly explain:

_____

_____

_____

11. Please list any other comments or recommendations you have regarding the application of computer technology in the school psychology profession:

_____

_____

_____

12. If you DO NOT have access to computers, or DO NOT train your students in computer technology, please indicate in Column 7 on the attached chart which applications you believe would be most useful in the school psychology profession by rank ordering your choices from 1-10 (with 1 being most useful).

13. If you DO have access to a computer, please fill out the attached chart.

14. a. In column 1 is a listing of possible school psychology applications of computer technology (see reverse side for description of terms);
    b. In column 2, check those applications on which your students are being trained;
    c. In column 3, list the software name and a brief description;
    d. In column 4, list the developer and/or distributor, including addresses, if known;
    e. In column 5, list the current purchase price, if known;
    f. In column 6, rate the software using the following criteria:
        Excellent: Easy to use without modification, good documentation.
        Good: Requires some training and practice to master, may need modification.
        Fair: Lacks good documentation, more difficult to use, expensive.
        Poor: Not recommended for school psychologist applications, outdated.
    g. In column 7, rank order the software from most useful to school psychological practice to least useful (with 1 being most useful).

1 APPLICATION	2	3 SOFTWARE NAME	4 DEVELOPER/DISTRIBUTOR	5 COST	6 RATING E	G	F	P	7 RANK ORDER/ COMMENTS
Test: Administration Scoring Analysis									
Report Writing: Psychological Report Word Processor									
Data Management: Interventions Inventory Other:									
Research: Statistics Other:									
Intervention Strategy: Behavioral Instructional									
Time Management									
Other:									

-4-

Definitions of terms

I. Assessment

A. Test Administration - using computers to administer tests, usually forced choice items.
B. Test Scoring - input raw scores receive output of standard scores, grade equivalents, etc.; may be on tape or disc, or purchased on a per test basis from distributor.
C. Test Analysis - sometimes accompanies test scoring output; analyzes data according to set criteria or interpretive model.

II. Report Writing

A. Software specifically developed to facilitate psychological report writing, e.g. programmed text with options from which to choose to personalize report.
B. Use of word processor or text editor software to write and edit text.

III. Data Management

A. Interventions - software designed to organize, store and retrieve behavioral intervention data, making accountability for effectiveness of interventions possible, as well as increasing record keeping efficiency.
B. Inventory - software for purchasing, budgeting and ordering required assessment materials.
C. Other - assessment data record keeping, retest reminders, central files, IEP records, etc.

IV. Intervention Strategy

A. Behavioral - using microcomputers as part of contingency management procedures, e.g. to change inappropriate behavior, for motivational purposes, psychological programming, self-concept games, etc.
B. Instructional - recommending computer-assisted instruction (CAI) software as an instructional intervention, e.g. math exercises, quizzes, social studies units, simulated science experiments, etc.

V. Research

A. Statistics - software programmed to compute various statistical analyses on input data, e.g. correlation, ANAVAR, Multiple Regression, etc.
B. Other - using the computer for research, e.g. software development and testing, simulations, CAI vs traditional techniques, etc.

VI. Time Management

A. Assessment of school psychologist's activities for budgetary and planning purposes.
B. Assessment of teacher or pupil activities as part of consultation and intervention processes.

VII. Other

A. Simulations or practice programs for training or continuing professional development.
B. Systems evaluation
C. Be creative!

NASP

ASSISTANCE TO STATES COMMITTEE

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Committee Purposes:

A. Assess service and information needs of State Associations.

B. Respond to these needs and needs as reflected in requests from states by:

   1. Forwarding a request for assistance to appropriate NASP officers, Executive Managers or committees or

   2. Developing projects to speak directly to identified state needs.

   The emphasis will be on developing simple, smooth, efficient, and effective NASP assistance in meeting state needs.

C. Convey information from NASP to states on NASP materials and services.

D. Convey information from states to NASP on state associations services and materials.

E. Periodically inform the NASP Executive Board regarding activity in the above areas.